

## Luciano Berio's *Sequenza V* Analyzed along the Lines of Four Analytical Dimensions Proposed by the Composer

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### Abstract

In this paper, Luciano Berio's *Sequenza V* for solo trombone is analyzed along the lines of four analytical dimensions proposed by the composer himself in an interview from 1980.

It is argued that the piece in general can be interpreted as an exploration of the 'morphological' dimension involving transformation of the traditional image of the trombone as an instrument as well as of the performance context. The first kind of transformation is revealed by simultaneous singing and playing, continuous sounds and considerable use of polyphony, indiscrete pitches, plunger, flutter-tongue technique, and unidiomatic register, whereas the latter manifests itself in extra-musical elements of theatricality, especially with reference to clown acting. Such elements are evident from performance notes and notational practice, and they originate from biographical facts related to the compositional process and to Berio's sources of inspiration. Key topics such as polyphony, amalgamation of voice and instrument, virtuosity, theatricality, and humor – of which some have been recognized as common to the *Sequenza* series in general – are explained in the context of the analytical model.

As a final point, a revised version of the four-dimensional model is presented in which tension-inducing characteristics in the 'pitch', 'temporal' and 'dynamic' dimensions are grouped into 'local' and 'global' components to avoid tension conflicts within dimensions. Furthermore, in the 'morphological' dimension a distinction is made between transformation of 'instrumental idiomatics' and of the 'performance context'. Hence, the revised model accounts for theatricality and performance without failing to realize the increasing transformation of the instrumental idiom which constitutes a key aspect of the musical meaning communicated in this piece.

## 1. Introduction

Undoubtedly, the *Sequenzas* for various solo instruments composed by Luciano Berio (1925-2003) constitute a major contribution to Western art music of the twentieth century. That the *Sequenzas* establish a suitable starting point for exploration of musical meaning has already been pointed out in a recent review published in this journal (Gallon, 2009). Here I will elaborate on Gallon's general overview, by addressing a single piece in detail, namely *Sequenza V* for solo trombone (1966),<sup>1</sup> along the lines of an analytical model proposed by the composer himself in relation to another piece in the series: namely the first *Sequenza* for solo flute.

In an interview with Rosanna Dalmonte in 1980, Berio introduced four so-called 'dimensions' within the framework of which, according to him, the flute *Sequenza* evolves:

The temporal, dynamic, pitch and morphological dimensions of the piece are characterized by maximum, medium and minimum levels of tension. The level of maximum tension (which is also an exceptional one relative to the norm of conventional playing) within [1] the temporal dimension is produced by moments of maximum speed in articulation and moments of maximum duration of sounds, the medium level is always established by a neutral distribution of fairly long notes and fairly rapid articulations, and the minimum level entails silence, or a tendency to silence. [2] The pitch dimension is at its maximum level when notes jump about within a wide gamut and establish the tensest intervals, or when they insist on extreme registers: the medium and minimum levels follow logically from this. The maximum level of [3] the dynamic dimension is naturally produced by moments of maximum sound energy and maximum dynamic contrast. What I call [4] the morphological dimension is placed, in certain aspects, at the service of the other three and is, as it were, their rhetoric instrument. It seeks to define degrees of acoustic transformation relative to an inherited model which in this case is the flute with all its historical and acoustic connotations. Thus a level of maximum tension within the morphological dimension is obtained when the image, my image of the flute, is drastically altered with flutter tongues, key clicks and double stops [...] (Berio 1985: 97-98, underlining by the present author).

Berio evidently described his model specifically with respect to the flute piece. Nevertheless, since one does indeed recognize many similarities between the *Sequenzas* as regards compositional strategy – a fact which is also acknowledged by the composer himself (Berio 1985: 90-97) – it would both be possible and relevant to make an attempt to transfer Berio's concepts to other *Sequenzas* composed for other instruments and to make the model operational for analytical purposes. Therefore, taking the composer's words into consideration, the current analysis of *Sequenza V* will concentrate on testing whether the 'four-dimensional' model can be applied to this particular piece as a practical means of analysis.

This endeavor will take up most of the second part of the essay whereas the first part will briefly place the piece in a biographical and historical context as part of Berio's *Sequenza* series and as a contribution to Western music from the twentieth century in general. More specifically, the performance notes for *Sequenza V*, certain issues related to notational practice and relevant information on the inspiration for the piece and its compositional process will be included here. This is due to the fact that the ways in which

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<sup>1</sup>I would like to thank Prof. Rokus de Groot for drawing my attention to this piece and for inspiring discussions of this as well as of other pieces during my stay in Amsterdam in the Fall 2008.

this piece relates to and breaks with tradition, namely with respect to theatrical elements, the role of the musician and the use of the instrument, are especially relevant to the third part of the essay.

Following the musical analysis, the third part deals with different ways of illustrating how this piece might be interpreted as an exploration of the *morphological dimension*. Since one of the composer's main aims with his *Sequenzas* was to communicate the results of his experimentation with the limits of various musical instruments sometimes even resulting in a transformation of their very identity (Halfyard 2007a: xx),<sup>2</sup> a study of the morphological aspects from the four-dimensional analytical model seems essentially valuable from the perspective of musical meaning.

Given the role of this dimension as the “rhetoric instrument” (Berio 1985: 98) of the other three dimensions, my argument will to a certain extent be grounded on the preceding analysis of musical characteristics. Additionally, this interpretation will be substantiated by exploring to what extent key concepts such as polyphony, virtuosity, and transformation of an instrumental idiom (in this case specifically through theatrical elements, irony and amalgamation of voice and instrument), which have all been recognized as dominant elements throughout the *Sequenza* series (Berio 1985: 90-91, 93, 97; Halfyard 2007a: ix), can be placed in the context of this model as representing significant factors of morphological tension.

In the course of the analytical process outlined above, the brevity and informal character of Berio's description regarding the flute *Sequenza* become problematic. For instance, the composer only mentioned characteristics of all three tension levels within the temporal dimension. As for the other three dimensions, he contented himself with specification of the maximum level and then asserted that “the medium and minimum level follow logically from this” (Berio 1985: 98). Finally, and very importantly, Berio refrained from describing mutual interaction between dimensions. In the concluding section of the essay I will therefore attempt a provisional evaluation of the analytical method based on my interpretation of the analysis, and thus make suggestions as to how the model could be improved for possible future application.

The table below sums up the tension-inducing musical characteristics stated by the composer. Moreover, additional derived criteria appear in square brackets.

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<sup>2</sup>As pointed out by Halfyard (2007a: xx), “the extent to which the *Sequenzas* often challenge conventional ideas of the nature of the instruments” is a general theme emerging in various essays from the volume Berio's *Sequenzas: Essays on Performance, Composition and Analysis* (2007, Aldershot: Ashgate Publishing Ltd.). A remarkably apt example is the contribution by Kirsty Whatley (2007) on Berio's transformation of the traditional image of the harp in *Sequenza II*.

LEVEL OF TENSION	<i>Maximum</i>	<i>Medium</i>	<i>Minimum</i>
DIMENSION			
<i>Temporal</i>	Maximum speed of articulation [i.e. staccato, accents, and fast notes], maximum duration of sounds	Fairly long notes, fairly rapid articulation	Silence or tendency to silence
<i>Pitch</i>	Jumping notes, wide ambitus, tense intervals	[Medium pitch stability, medium register]	[Repeated notes or scalar motion in stable register]
<i>Dynamic</i>	Loud dynamics, dynamic contrasts	[Medium dynamics, medium stability]	[Soft and stable dynamics]
<i>Morphological</i>	[Very untraditional use of the instrument]	[Both fairly traditional and untraditional use of the instrument]	[Very idiomatic use of the instrument]

**Table 1.** Overview of the four-dimensional analytical model proposed by Berio (1985: 97-98).

## 2. Context

Aside from teaching at prominent schools of music in the United States, Berio also directed the electro-acoustic section at IRCAM in Paris 1974-80 and served as artistic director of both *Orchestra Regionale Toscana* in 1982 and *Maggio Musicale Fiorentino* in 1984. Moreover, Berio was granted the *Ernst von Siemens Musikpreis* in 1989 and received honorary doctorates from the *City University of London* and the *University of Siena* (Griffiths 2008). These accolades testify that unlike many other brilliant composers of the twentieth century, Berio managed to draw the attention of a wide public to his works (Griffiths 2008). This was partly due to his formidable creative energy, but also arguably due to the fact that his approach to composition was not quite as dogmatic as that of many other representatives of the ‘Darmstadt School’ (Gravesen & Knakkegaard 2003: 63-64). Instead, his music draws on theatrical performance elements, musical gestures as well as other extra-musical components such as text, all of which are easily recognizable and thus become intuitively meaningful to the listener.

In *Sequenza V*, extra-musical elements of theatricality are evident from performance notes and notational practice, and they have their roots in biographical facts related to the compositional process and to Berio’s sources of inspiration. Later on, theatrical elements will be related to the analytical model with respect to the way in which they carry musical meaning, predominantly in the morphological dimension.

### 2.1 Composition and First Performance

*Sequenza V* belongs to the first group of the series of 14 *Sequenzas* that came into existence throughout most of Berio’s career, namely in the years from 1958 to 2002. The first in the series was *Sequenza* for flute in 1958. After a few years, Berio decided to extend this concept to other instruments which in the 1960s resulted in *Sequenza II* for harp (1963), *Sequenza III* for female voice (1965-66) *Sequenza IV* for piano (1965-66), *Sequenza V* for trombone (1966), *Sequenza VI* for viola (1967), and *Sequenza VII* for oboe (1969). Then a break followed before further compositions emerged in the following decades: *Sequenza VIII* for violin (1976-77), *Sequenza IX* for clarinet (1980, transcribed for saxophone as *Sequenza IXb* in 1981), *Sequenza X* for trumpet with piano resonance (1984), *Sequenza XI*

for guitar (1987-88), *Sequenza XII* for bassoon (1995), *Sequenza XIII* for accordion (1995-96), and finally *Sequenza XIV* for cello (2003).

Although part of the B section of *Sequenza V* was first performed in April 1965 by the Slovenian composer and trombonist Vinko Globokar (1934-) as the unpublished work *Essay* (Baker 1994: 32), Berio had as early as 1964 expressed his intention to compose a *Sequenza* for Stuart Dempster (1936-) (Halfyard 2007b: 100), a renowned American trombonist and composer. The complete *Sequenza* was eventually also both commissioned and officially first performed by Dempster in San Francisco in March 1966 (Berio 1985: 179; Osmond-Smith 1991: 133). In the entry on Globokar in *Grove Music Online*, Niall O'Loughlin gives the impression that this piece was written for Globokar (O'Loughlin 2008), even though Globokar himself maintains that he did not even contribute to the initial *Essay* (Halfyard 2007b: 101). Hence, we must acknowledge that this composition seems to be written for Dempster. This is also consistent with Berio's indications in the score as well as with Dempster's own words: "I would occasionally goof around in rehearsals like I goof around generally [...] Berio said that I am like Grock – he said that several times – and I think that was the inspiration for the piece" (Baker 1994: 30-31).

## 2.2 Grock the Clown – An Essential Source of Inspiration

The 'Grock' that Dempster refers to above was the famous Swiss circus clown Karl Adrien Wettach (1880-1959) who played 24 different instruments and introduced musical sketches in many of his routines.<sup>3</sup> According to Dempster, Grock also inspired Berio's *Sequenza III* for voice (Baker 1994: 31). In the score of *Sequenza V* as well as in the following statement Berio acknowledges that the piece was dedicated to the memory of this ingenious comedian:

Grock was my neighbour at Oneglia: he dwelt in an odd and complex country house in the hills, in a sort of oriental garden with small pagodas, small lakes, bridges, streams and weeping-willows. With my school fellows I used to climb over his garden gates to steal oranges and tangerines. During my childhood the closeness, the excessive familiarity with his name and adults' indifference prevented me from comprehending his genius. Only later - I was 11 years old - I had the chance to see him in performance at Teatro Cavour in Porto Maurizio I realized it. During that performance, just once, he suddenly stopped and, staring at the audience, he asked 'Warum?' (why?). I didn't know whether to laugh or cry, I wished I could do both of them. After that experience I haven't stolen oranges from his garden anymore. *Sequenza V* is a tribute to that 'Warum?' in English: why. (Conant 2005)

Thus, in an analysis of *Sequenza V* it would be a mistake not to bear in mind theatrical elements represented by various references to Grock the Clown as a character and as a representative of clown acting in general.

## 2.3 Performance Notes

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<sup>3</sup>See for instance the website <http://www.osborne-conant.org/Grock.htm> for video clips of some of Grock's routines.

In his performance notes, Berio states that the performer should be dressed in white tie and tails and be illuminated by a spot from above.<sup>4</sup> Interestingly, this is in fact the only *Sequenza* where the composer calls for specific attire.

In his commentary to the performance notes Stuart Dempster suggests that the spot be a follow spot following the performer who is entering the stage, standing while playing the A section and sitting while playing the B section. He also adds an alternative possibility of lighting. Of course, the composer's own words would normally take precedence over later remarks, but, on the other hand, as the first performer who definitely corresponded and collaborated intensely with the composer, Dempster's comments certainly originated in hands-on experience with the piece and should thus be viewed at least as an important appendix to the composer's own words. Consequently, the introduction of the follow spot generally seems to support the idea of solemnity also indicated by the composer (i.e. "perform section B as though rehearsing in an empty hall") and thus makes up a well-informed, though not compulsory, choice.

Dempster also suggests that the low stand that should be on stage according to Berio be removed and the piece be completely memorized. Nevertheless, one cannot completely exclude the notion that Berio indeed had a specific intention with this stand, as it supports the composer's idea of "rehearsing in an empty hall" (in the B section). Hence, in this case, Dempster's suggestion is to be taken with a grain of salt. The same applies to many of Dempster's other comments (i.e. "look upward for imaginary prey while at the same time slowly 'taking aim' with trombone", "playing as though shooting", "give audience a grin", "section B is best performed with closed eyes, and the final bows should be somewhat stiff") which may express Dempster's own personality on stage as much as they represent the actual intention of the composer. Dempster admitted this possibility in an interview from 1988 (Baker 1994: 31).

## 2.4 Notational Practice

For his notation Berio developed distinctions between vocal sounds with exact and approximate pitch as well as between short notes and notes held until the next sound. Although breathing is decided by the performer in the A section, Berio uses a specific sign for inhaling, and in the B section breath units are indicated by bar lines. However, he asks for "the length of the breath units to be different" between performers and performances thus introducing a certain aleatoric component. Such improvisation is also perfectly consistent with the fact that he wants movements to "appear spontaneous" – another element of theatricality.

Interestingly, Berio preferred to use the numbers from ① to ⑦ to indicate dynamics. The choice of seven numbered dynamic markings probably has its roots in Olivier Messiaen's *Mode de valeurs et d'intensités* (1949), thus showing Berio's serialist pedigree,<sup>5</sup> but, unlike in Messiaen's piano piece, Berio's numbers do not refer to specific dynamic indications such as *piano*, *forte* etc. It is difficult to tell exactly why Berio chose this manner of notation, but he may have wanted to prevent any of the sort of expressive associations that he – as a native

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<sup>4</sup>The following paraphrases and quotations have all been taken from either Berio's performance notes (Berio 1966) or from Dempster's commentary (Dempster 1966).

<sup>5</sup>I kindly thank an anonymous reviewer for drawing my attention to this point.

speaker of Italian – might have found performers often mistakenly applied to such terms. In this context, ① simply means “as *p* as possible” whereas ⑦ means “as loud as possible” (cf. Berio 1966). That is, Berio establishes the two extreme borders in a notational practice which is otherwise infinite (there is normally no limit, at least in theory, to how many *p*'s or *f*'s a composer can write). This tendency towards extremities also extends to the *temporal dimension* due to Berio's notational devices for notes that are to be played “as short as possible” or “as long as possible”. In this way, in the name of theatrical performance, the composer can indeed demand the utmost from the trombonist as regards the *dynamic* and *temporal dimensions*.

In a short passage in the A section, Berio notates the movements of the slide with a semi-graphic notation, and throughout the piece the position of the metal plunger (open, closed, and completely closed) and when the mute should be rattled inside the bell is indicated on a line under the staff. Finally, the position of the instrument (raised or lowered) is sometimes indicated with dotted arrows. Thus, degrees of morphological tension not only emerge from alternative playing techniques, but also from various ways of notating new, particularly theatrical, elements – such as the position of the slide when not played, as well as that of the instrument as a whole.

### 3. Music Analysis

According to the composer's own words, the title *Sequenza* is meant to draw attention to the fact that these compositions are all constructed of consecutive sequences of ‘harmonic fields’, “from which the other, strongly characterized musical functions were derived” (Berio 1985: 97). Consequently, it seems necessary to divide the piece into formal units before we can proceed to characterize the music in terms of the four analytical dimensions.

As we have seen, in the performance notes Berio speaks about an A and a B section, and also in the score he has notated A and B, obviously in order to clarify the binary division of the piece. The rather short A section gradually gets more intense and finally leads to a culmination where the performer utters a bewildered “Why?”. The early climax – one is nearly tempted to call it an ‘inverted Golden Section’ – provides a sense of disproportion which makes the B section seem even longer than it actually is. Such displacement in time is a well-known dramatic device that also refers to stereotypical clown acting.

#### 3.1 The A Section

The piece is initiated with three loud, very short *a*'s in the high register separated by approximately 4-6 seconds of silence. The third sound is varied with a crescendo from ④ on a note with closed plunger anticipating the loud accent. The fourth tone is a loud *e-flat* thus emphasizing the tense, descending tritone interval. The combination of rapid articulation and silence, of constant register and the tense tritone interval as well as of constant and loud dynamics causes us to assign the *temporal*, *pitch* and *dynamic* dimensions to a medium level of tension.

The beginning has a certain resemblance with a fanfare, although the tritone interval does not conform to the natural harmonic series. That is, even though tritone intervals are essentially far from unidiomatic for a modern trombone, one could still argue that a certain potential for morphological tension is present already in the opening seconds of the piece.

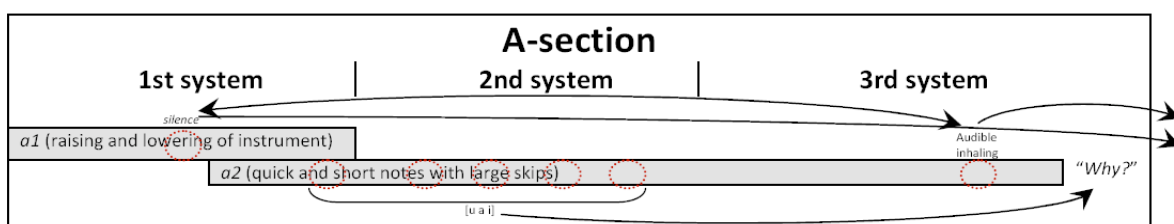
The instrument is supposed to be raised for each note and lowered in between, which is also done after the fourth note. Surprisingly, no note is played at this point in the piece. Such surprises are not uncommon in performances by clowns, and the very fact that this effect only works – i.e. transmits its meaning – when someone is actually watching the performer reveals the strong dependency on theatricality which is characteristic of this piece. The raising and lowering of the instrument thus seem to constitute the central topic of this subsection of A which we will name a1.

Conversely, the central topic of the following subsection (a2), persisting until the “Why?” in the third system, is the presence of quick and short notes with large skips spanning over a wide ambitus and containing considerable dynamic contrasts. The level of tension is thus at a maximum in the temporal, pitch and dynamic dimensions.

In a2 the plunger is used as a means of variation in sound, and the composer calls for the vowel sounds [u a i], first as [u] alone, then as [u a] and later in its complete form as [u a i]. This seems to be a partly deconstructed, ‘preverbal’ foreshadowing of the bewildered “Why?” which apparently adds a sort of human sensibility to the instrument itself, thus increasing tension in the morphological dimension. Further consequences of the amalgamation of voice and instrument will be taken up later in section 4.2.

In the third system a 10-tone figure is repeated once. This figural repetition seems to be starting up a ‘motor’ of nervous motion of the slide indicated in a kind of quasi-graphic notation. The occasional notes are accompanied by two accented notes in the low register echoed by notes in the high register. The movement of the slide obviously is a physical gesture rather than a musical one. In the final moment before “Why?”, Berio calls for audible inhaling of the air in the instrument – a subtle effect that, simultaneously, recalls the displacement after the fourth note in the beginning and foreshadows the dominant inhaling sounds found in the subsequent B section.

Hence, the A section can be regarded as constructed from two compositional concepts (a1 and a2) overlapping with considerable internal and especially external references as indicated by the arrows in example 1 below.



**Example 1.** Formal division including internal and external references in the A section of Berio’s *Sequenza V*.

In the tables below, the previous observations about a1 and a2 have been compared with the criteria of the four-dimensional analytical model. By comparing the two tables we can detect a general intensification from a1 to a2 with respect to all four dimensions. Importantly, the morphological dimension is so far only inflicted with a moderate level of tension – that is, despite a certain potential for morphological tension, until now the instrument behaves more or less as expected.



<b>a1</b>	LEVEL OF TENSION	<i>Maximum</i>	<i>Medium</i>	<i>Minimum</i>	<i>Characteristics</i>
DIMENSION					
<i>Temporal</i>		-----x-----			Rapid articulation, but with much silence
<i>Pitch</i>		-----x-----			Constant register, but tense tritone interval
<i>Dynamic</i>		-----x-----			⊙-⊙. Loud, but constant dynamics
<i>Morphological</i>		-----x-----			Traditional use of the instrument

Table 2. Analysis of subsection a1.

<b>a2</b>	LEVEL OF TENSION	<i>Maximum</i>	<i>Medium</i>	<i>Minimum</i>	<i>Characteristics</i>
DIMENSION					
<i>Temporal</i>		-----x-----			Many quick and short notes
<i>Pitch</i>		-----x-----			Big leaps spanning over wide ambitus
<i>Dynamic</i>		-----x-----			⊙-⊙. Generally loud with many contrasts
<i>Morphological</i>		-----x-----			Leaps are rather idiomatic, but vowel sounds are novel

Table 3. Analysis of subsection a2.

Before moving on to the B section, I will take a look at the pitch-class structure of the A section. It is of course arguable to what extent a detailed pitch-class structure and namely the occasional – and often quite hidden – introduction of new pitches is perceived by an average listener. However, the very fact that this structure might have had significance to the composer on its own justifies the inclusion of such deliberations in the analysis.

In the musical examples below, pitches are listed in the order of appearance throughout the A section. From the figure following the musical examples, it is evident that a gradual pitch-class expansion takes place with the two initial notes *a* and *e-flat* as a starting point. In the second system, the space between these two centers is filled out, and in the third system further notes are added in descending direction (order of appearance: 9, 10, 11) finally reaching chromatic completion (assuming octave equivalence) with *b-natural* in the slide movement passage at the end of a2. Already in the beginning of the third system, the filling out of the tritone between *e* and *b-flat* in descending direction is predicted in an ascending glissando. Thus, the gradual pitch-class expansion contributes extensively to the development towards the climax on “Why?”. Both the increase in rhythmic density and the gradual pitch accumulation have previously been noticed by Webb (2007).

Many new pitches are introduced with short notes – *d* even with a glissando. There seems to be no systematic pattern of note duration, or in terms of the number of repetitions of other pitches before the introduction of a new pitch class. This can be understood as yet another element of surprise related to clown acting. To some extent, the gradual expansion beyond chromatic completion finally introducing unspecified ‘chance pitches’ can also be interpreted as a reference to the development from strict serialism towards aleatoricism which found expression in works by some of Berio’s contemporaries.

order of appearance: 12 11 10 9 2 3 5 8 6 4 1 7

1st system:					x	x				x	x
2nd system:				x	x	x	x	x	x	x	x
3rd system (until slide):	x	x	x	x	x	x	x	x	x	x	x
slide movement:	x	x	x	x	x	x	x	x	x	x	x

**Example 2.** Overview of the gradual pitch-class expansion in the A section of Berio's *Sequenza V*.

### 3.2 The B Section

Whereas the A section mostly explored discrete pitches, Berio makes use of the ability of the trombone to create glissandi in between the exact pitches of the chromatic scale in the B section. Moreover, the fact that the performer is now sitting, in addition to the inclusion of longer note values (if you can speak of 'note values' at all in proportional notation), and the constant sound as well as the call for simultaneous playing and singing clearly distinguish the B section from the preceding one. Whereas the A section could be described as extroverted, the B section is generally much more introverted in character (Halfyard 1997: 100). Nevertheless, this section is far from completely stable, and by degrees other compositional devices are introduced. In the following discussion of the B section, I will assign bar numbers to the breath units naming the first one after "Why?" as no. 1.

The first subsection of B – i.e. b1 – begins immediately after "Why?" in mm. 1-2 where the trombone plays the ascending interval of a tritone (*b-flat* to *e*) representing an inversion of the initial interval of the piece. Whereas the A section began from the top, the B section begins from the bottom with the instrumental pitches gradually rising chromatically. The clear opposition between the two main sections is thus established.

The b1-subsection is generally governed by remarkably soft and constant dynamics (①-②) and a focus on certain central tones in a narrow, medium register. The tension levels in the dynamic and pitch dimensions are thus at a minimum.

The note values are long, and the articulation is slow – thus motivating us to assign a minimum tension level in the temporal dimension. However, the absolute lack of silence runs counter to this intuition. The question of internally conflicting tension-inducing characteristics within the individual dimension will be taken up in the evaluation of the analytical method in the final section of this essay.

Instead of silence, Berio calls for continuous sound in the B section. Inhaling is done while singing a vocal sound and rattling with the plunger inside the bell. In the performance notes the composer states: "The transition between inhaling and exhaling must always occur without noticeable interruptions so that throughout section B there is no break in sound [...]" (Berio 1966). In this way Berio effectively hides the practical necessity of breathing and creates an impressive sobbing snuffle. The 'sad clown' is a fixture of circus routines, but in this case we do not know exactly whether this is real or not; whether we should laugh or cry (cf. Berio's own account of his first attendance of a Grock-show as quoted from Conant [2005] above). Berio breaks with the traditional prevention of secondary 'noise' sounds, and

his prevailing concern for the physical aspects of the musician playing an instrument must have appeared rather novel at the time.

The commissioner of the piece, Stuart Dempster, was especially interested in new sounds and techniques and also researched those of non-Western instruments, most notably the traditional Aboriginal instrument *didgeridoo* (Tarr 2008). Playing this instrument requires command of circular breathing (Knopoff 2008), and this technique was later on thoroughly explored by Berio in his *Sequenza XI* for bassoon (1994). However, already in the B section of *Sequenza V* we see that the composer approached the technique by calling for continuous sound, preferably with no interruption. It is of course difficult to say whether Dempster's fascination with the didgeridoo was an actual inspiration for Berio when composing this piece, namely because the B section appeared independently as *Essay* before Dempster commissioned *Sequenza V* and because Dempster's stay as a Fulbright scholar in Australia did not take place until 1973; but it suggests that Dempster must have had the potential to fulfill Berio's requests with respect to a constant tone.

<b>b1</b>	LEVEL OF TENSION	<i>Maximum</i>	<i>Medium</i>	<i>Minimum</i>	<i>Characteristics</i>
DIMENSION					
	<i>Temporal</i>	-----x-----			Long notes and slow articulation, but no silence
	<i>Pitch</i>	-----x-----			Rather constant pitch around central notes, narrow register
	<i>Dynamic</i>	-----x-----			①-②. Very soft and constant
	<i>Morphological</i>	-----x-----			Simultaneous playing and singing, continuous sound, flutter tongue, microtonal glissandi, rattling plunger

**Table 4.** Analysis of subsection b1.

The continuous sound, the rattling of the plunger in the bell, the omnipresent *flutter-tongue* technique as well as the simultaneous singing and playing and the microtonal glissandi all deviate from standard performance practices of the trombone. Thus, a maximum level of tension in the morphological dimension is encountered in b1.

If we take a closer look at the pitches that Berio chose for the inhaling intermissions, we will discover that a certain development is taking place. After four instances of *e-flat*, Berio makes a small detour to *f* in m. 11, returning to *e-flat* in m. 13. Subsequently, there is a shift to 'approximate *f*' (indicated by a diagonal line through the note). In this way the central tone is blurred before the transition to *b-flat* from m. 17 and onwards. This section is less stable than the previous one with quite a few detours. The ambiguity is also due to the fact that more than one breath unit is now inserted between the inhaling intermissions. However, the two main tonal centers still seem to be *b-flat* and *e-flat* (from m. 35) returning to *b-flat* (in m. 40). The 'competing' central tones are evident from the attempt below to make a reduction of central-tone development throughout the B section.



**Example 3.** Central tones used for the inhaling intermissions in the B section of Berio's *Sequenza V*.

The fact that the central tones become unstable from m. 17, and that several breath units are inserted between the inhaling intermissions from m. 24 and onwards, ultimately results in dissolution of the compositional concept that identified the subsection b1. Consequently, a new subsection (b2) appears beginning from m. 17. The transition takes place very gradually so this bar number only indicates the very first introduction of new material (i.e. the new tonal center *b-flat*). Elements from b1 persist throughout the remainder of the piece, albeit to a lesser extent.

Another indication that something new seems to be happening is the chromatic motif (*e, f-sharp, f-natural, e*) in short, accented notes in the low register in mm. 16-25. Gradually more and more of these short notes with rapid articulation on discrete pitches are added, and also the double and triple staccatos in mm. 30, 34 and 43 provide increasing temporal tension and remind us that the ‘good, old trombone’ has now returned (i.e. decreasing morphological tension). However, foreign elements are still present in the form of *harmonic glissandi* (mm. 18, 24 and 29), simultaneous playing and singing, inhaling intermissions, flutter tongue, rattling plunger, and the unidiomatic use of the very high register in mm. 44-46. The extremely wide register leads to increased pitch tension though not reaching the maximum level since the extreme registers are primarily reached through stepwise motion and not by leaps. Also three instances of completely closed plunger appear in mm. 28, 33 and 34. This technique is not specifically well-developed in this piece and only appears in these three instances as a means of creating an effective crescendo to the loudest dynamic possible. The dynamic dimension is also subject to raising tension in b2 with many contrasts spanning from ② to ⑦.

<b>b2</b>	LEVEL OF TENSION	<i>Maximum</i>	<i>Medium</i>	<i>Minimum</i>	<i>Characteristics</i>
	DIMENSION				
<i>Temporal</i>		-----x-----			Occasionally quick, accented notes, double and triple staccato, no silence
<i>Pitch</i>		-----x-----			Very wide register, but mostly stepwise and not many leaps
<i>Dynamic</i>		-----x-----			②-⑦. Medium loud with many contrasts
<i>Morphological</i>		-----x-----			Simultaneous playing and singing, continuous sound, glissandi, flutter tongue, rattling plunger; but also double and triple staccatos and accented notes

**Table 5.** Analysis of subsection b2.

The quick notes, double and triple staccatos, and ascent to the extreme high register in mm. 43-46 create a climax which is somewhat related to that in the end of the a2-subsection. Also here the result is a “Why?”, but this time it is uttered by the trombone, and not by the performer, in a register which is rather contrasting to the preceding one. This is the beginning of the next subsection (b3) where we experience a decrease in dynamic tension (①-⑤) as well as in temporal tension due to a single inhaling breath unit of silence as well as a return to the long notes of the simultaneous singing and playing that we recognize from b1. The breath unit of silence refers back to both the beginning (a1) and to the inhaling intermissions of b1 and b2 whereas the vowel sounds [u a i] in mm. 46, 47, 49, 52, and 54

refer back to a2, and the flutter tongue in mm. 48-49 back to b1 and b2. The ascending tritone on long notes (*b-flat*, *e*, *f*) in mm. 54-56 refers back to the beginning of b1, which was in itself an inverted reflection of the opening interval (a1).

Naturally, the polyphony between voice and instrument in mm. 50-58 reminds us of b1 and b2. This time, however, the development is slightly more logical contracting from a perfect fifth (m. 50) to a perfect fourth (50) which is inverted around *e-flat* to *e-flat/a-flat* (51) contracting to a minor second and a minor third (52) ending in unison on *f* (52, 56, 57) and later *e* (58).<sup>6</sup> In conclusion, the highly expressive final b3-subsection contains numerous references back to all of the previous subsections thus providing a concluding sense of formal coherence.

b3	LEVEL OF TENSION	Maximum	Medium	Minimum	Characteristics
	DIMENSION				
	<i>Temporal</i>	-----x-----			Long as well as quick notes, some silence
	<i>Pitch</i>	-----x-----			Not only leaps, but also stepwise motion, fairly wide register
	<i>Dynamic</i>	-----x-----			⓪-Ⓞ. Generally soft, though with some contrasts
	<i>Morphological</i>	-----x-----			Simultaneous singing and playing, vowel sounds, glissandi; but also single, accented notes

Table 6. Analysis of subsection b3.

### 3.3 Formal Considerations

I will now elaborate on the *formal micro- and mesostructure* (i.e., the individual subsections and the two sections A and B individually) and the *formal macrostructure* (i.e., the interaction and transition between the two main sections as well as the overall form). In this connection the analytical figures from the four-dimensional analysis constitute a useful tool for pinpointing development and contrasts in tension levels.

In the A section, the temporal, pitch, dynamic, and morphological components evidently follow each other moving steadily towards an increasing tension level from a1 to a2. The morphological tension is generally relatively low.

Conversely, in the B section the morphological tension is at its highest, and the interaction between the four dimensions becomes slightly more ambiguous. This is especially prominent in the transitions between the three subsections of B where tension levels of some dimensions change while others remain the same.

As we experienced from the analysis of pitch structure, the B section can furthermore be understood as an arch form where the central tones of b1 and b3 concentrate in a relatively stable manner around the pitch *e-flat* whereas the central tone in b2 is much more unstable. This subsection begins and ends with the same central tone *b-flat* thus making b2 an arch form on its own.

Interestingly, one might perceive *b-flat* as the dominant of *e-flat* (which would be the case in a traditional, tonal context). Then the initial pitch pair of the piece – the tritone *a* and *e-flat* – would constitute a harmonic antithesis to *e-flat/b-flat*, with the same ‘tonic’ (*e-flat*),

<sup>6</sup>Moreover, m. 56 is a retrograde of m. 52, and m. 57 is a repetition of m. 56 with voice exchange between voice and instrument.

as if, from a global perspective, the vibrant, extroverted tritone of the A section had been subdued into a dominant/tonic relationship in the B-section.<sup>7</sup>

Regardless of whether one is willing to attribute a tonal interpretation to the *e-flat* and *b-flat* in the B-section, it does at least seem incontrovertible that these two pitches represent some kind of harmonic contrast. Hence, the pitch-structure development in the B section seems to constitute an appropriate manifestation of Berio's previously mentioned idea of "harmonic fields" (Berio 1985: 97).

As stated earlier, various references across formal boundaries create a general sense of formal coherence with respect to the global form. Nevertheless, the local transition between the two main sections is strongly characterized by contrast, which was for instance due to difference in register and playing techniques, the introduction of continuous sound, and the fact that the performer is sitting instead of standing. Furthermore, this sense of contrast becomes clearly evident when comparing the analytical tables for the subsections a2 and b1 (tables 3 and 4 above). The way that B complements A is shown in the fact that the shape of table 4 is almost a perfect inversion of table 3.

From a global perspective the development in the temporal, pitch and dynamic dimensions seems to represent an arch form where the initial medium tension level eventually returns in b3. Meanwhile, the morphological tension level starts out from an absolute minimum in a1, moving towards higher tension in a2, reaching a climactic level of maximum tension in b1, before finally stabilizing at a relatively high morphological tension level in b2 and b3.

Hence, a remarkable formal discrepancy seems to exist between the morphological dimension and the remaining three dimensions. The instrument seems to have undergone a transformational process towards higher morphological tension in the course of the piece, and Berio's piece might even be interpreted as representing a transformation of the instrument throughout the history of Western art music.

#### 4. Exploring the Morphological Dimension

In the discourse on Berio's *Sequenzas* certain topics seem to reoccur frequently, thus binding the series together as a whole. Polyphonic playing and virtuosity were mentioned by the composer himself (Berio 1985: 90-91, 97); furthermore, Janet K. Halfyard (2007b) has argued that theatrical elements are present in many of the *Sequenzas*, in particular through "the idea of virtuosity as a specifically musical form of theatricality" (Halfyard 2007b: 99). In *Sequenza V* theatricality is especially prominent, and, as argued above in the section on context, this was probably due to Berio's personal admiration for Grock and certain aspects of the compositional process. As a special case of theatricality, clown acting inevitably manifests itself in humor, which is arguably a general trait of Berio's music (Griffiths 2008). Another topic specific to this particular *Sequenza* is the amalgamation of voice and instrument, which the composer calls for in the score as well as in his performance notes by stating that "[i]nstrumental sounds are often combined with vocal sounds: the performer should always obtain a similarity of color and attack between the two" (Berio 1966).

Although some of these topics – polyphony, amalgamation of voice and instrument, virtuosity, and humor – were already mentioned in passing in the analysis above, I will now

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<sup>7</sup>I kindly thank an anonymous reviewer for drawing my attention to this point.

deal with them in further detail and discuss the way in which they fit the four-dimensional analytical model.

#### 4.1 Finding Polyphony in the Trombone

In the texture of *Sequenza V* we have encountered quite a few implications of *polyphony*: (1) the accented notes in the passage with slide movement in a<sub>2</sub>; (2) the chromatic motif in the low register in mm. 16-25 of the B section; (3) the polyphony through dynamics and contrasting registers in mm. 40-41; (4) the registral polyphony in mm. 46-48; and finally, (5) the concluding two-voice polyphony between voice and instrument in mm. 50-52. All occurrences of simultaneous singing and playing must be considered as extensions of this tendency towards polyphonic thinking.

In the interview which probably represents his most extended discussion of the *Sequenzas*, Berio (1985) emphasized the prominence of harmony and polyphony as a common element of the *Sequenzas*. Specifically, he claimed polyphony to be a prevailing theme in his pieces for monodic instruments:

All the other Sequenzas for solo instruments are intended to set out and melodically develop an essentially harmonic discourse and to suggest, particularly in the case of the monodic instruments, a polyphonic mode of listening [...] I wanted to establish a way of listening so strongly conditioned as to constantly suggest a latent, implicit counterpoint. The ideal was the ‘polyphonic’ melodies of Bach [...] although it was a bit utopian, the experience was extremely useful to me. (Berio 1985: 97)

Since polyphony is not at all idiomatic to monodic instruments, an exploration of polyphony on the trombone may indeed sound like a contradiction. Thus, polyphony is certainly one of the main issues making the B section stand out with a relatively high level of morphological tension.

Despite the ‘utopian’ nature of polyphonic playing on the trombone, we must acknowledge that Luciano Berio succeeded in his quest. It is worthy of notice, however, that he did not confine himself to the well-known pseudo-polyphony of J.S. Bach (see 1-4 above). Berio refers to this in the quotation, but he also developed a means of creating ‘true polyphony’ via simultaneous singing and playing.

#### 4.2 Amalgamation – When Your Instrument Becomes Your Voice and Vice Versa

The latter, so-called ‘true polyphony’ is a clear example of the *amalgamation between voice and instrument* that the composer asks for already in the performance notes: “Instrumental sounds are often combined with vocal sounds: the performer should always obtain a similarity of color and attack between the two” (Berio 1966). Truly, the whole B section brings numerous brilliant examples of this amalgamation finally culminating in the very last bar where they definitively end on the same tone. Also the vowel sounds [u a i] referring to the vocal outburst “Why?” represent Berio’s effort to literally let the musician speak through his instrument.

Dealing with the effect of performance and theatricality, Halfyard states:

When we look at the concert platform, we tend not to see a person holding a violin, for example, we see a violinist. Built into that preconception of what a violinist is are various assumptions and expectations about the gestural vocabulary of performance: how the player stands, how the instrument is held, how the bow moves, and so on. As a result of this, in the action of performance, the body of

the player and the body of the instrument become, in effect, a single entity: the body of the performer becomes subsumed into the action of performance. (Halfyard 2007b: 110)

Shortly, we will consider the consequences of such listener assumptions and expectations being violated, but with respect to the current issue, it is essential to realize that in *Sequenza V* union of body and instrument is not only obtained through performance and theatricality, but also through essentially musical means, namely through the amalgamation of voice and instrument.

This close relation between musician and instrument supports the assumption that *Sequenza V* is not only intended to present a musical portrait of the trombone as an instrument but also of the trombonist as an instrumentalist. Due to the amalgamation of voice and instrument, it seems as if the musician is drawn into the morphological dimension, and, consequently, our perception of morphological tension does not only depend on distortion of our traditional image of the instrument, but also on distortion of our traditional image of the musician. This interpretation will have consequences for the evaluation and further development of the analytical model in the concluding section of this essay.

Berio once referred to the amalgamation of voice and instrument in *Sequenza V* as the “vocalization of the instrument” and the “instrumentalization of the voice” (Berio 1985: 93), and, putting this process into perspective, it seems to be very much comparable with the general concern for music and language found throughout Berio’s oeuvre. In many different ways, Berio has explored the overlap between – and possible amalgamation of – music and language (Griffiths 2008). In *Thema (Omaggio a Joyce)* music is constructed from three recorded readings of an excerpt from *Ulysses* by James Joyce which are transformed in various ways. Now and again, the words are rendered unrecognizable, and also the combination of three languages supports the assumption that Berio was assigning more value to the sound of the words than to the literal meaning itself. In semiotic – i.e. Saussurean terms – this can be referred to as a preference for the *signifier* at the expense of the *signified*, and it affirms Berio’s awareness of this distinction in language and also indicates his awareness that these concepts might be similarly applied to music. Hence, all the different instrumental transformations of the word “Why!” as well as the vocal imitations of the trombone sound found in *Sequenza V* can be regarded as essential exponents of the important process of amalgamation between music and language that endured to be a primary concern for Luciano Berio as a composer.

### 4.3 The Virtuosity of Performance

The call for simultaneous singing and playing is just one – perhaps the most challenging – of many different *virtuoso features* found in this piece of music. The frequent, sudden changes of register and the quick tones, namely in the high register, also make *Sequenza V* inaccessible to all but the most virtuosic of trombonists. According to Berio himself, “[v]irtuosity often arises out of a conflict, a tension between the musical idea and the instrument, between concept and musical substance” (Berio 1985: 90). Every time Berio exposes the limitations of the instrument or even transgresses the borders of traditional idiomatic playing, he also violates the assumptions and expectations of the listener, and thus a certain morphological tension arises. Such morphological tension caused by virtuosity often appears in combination with tension in one or more of the remaining three dimensions.



Nevertheless, virtuoso elements in *Sequenza V* are not limited to demonstration of mere technical skills, but also include techniques that imply musical substance in themselves: “My own Sequenzas are always written with this sort of interpreter in mind, whose virtuosity is, above all, a virtuosity of knowledge” (Berio 1985: 91). In this sense not only the performer’s technical skill on his instrument, but also his ability to perform and influence the audience are put to a test in *Sequenza V*. To Berio, Grock was an ideal role model as a possessor of the rare talent of theatrical virtuosity which he intended to transmit through the musical domain.

#### 4.4 Humor, *Verfremdung*, and the Performative Turn

The whole theatrical setting of the fifth *Sequenza* as prescribed in the performance notes as well as formal disproportion and many of the peculiar sound effects most certainly envelop the piece in a *humoristic atmosphere*. However, although Paul Griffiths (2008) has argued that humor is an omnipresent trait below the surface even in Berio’s more serious works, it does not manifest itself in its purest and most traditional form in this piece. Instead, various manifestations of morphological tension, including the essentially theatrical setting, actually create a characteristic *ironic distance* between the audience and the music being performed in front of them.

This distance effect can very well be conceived of as exposing the concept of “*Verfremdung*” developed by the German poet and playwright Bertolt Brecht whom Berio also acknowledged as an inspiration (Osmond-Smith 2007b: 3). In David Osmond-Smith’s words,

[a]lienation [i.e. *Verfremdung*] is essentially the critical suspension of empathy – of the pleasing illusion that we ‘know how some other person feels’. In its simplest and crudest form, it is achieved when an actor giving a ‘realistic’, post-Stanislavskian performance suddenly steps out of role. The spectator is confronted by the fact that the actor is giving a performance, and is implicitly invited to consider whether one is equally ‘performing’ one’s everyday ‘self’. (Osmond-Smith 2007: 3)

The Danish composer and music theorist Karl Aage-Rasmussen (1998: 199) once very aptly described the “Why?” uttered in the middle of the piece as resulting in “a staggering balancing act between a clown act and a question of life and death”.<sup>8</sup> Rasmussen’s point seems to be that the performer temporarily steps out of his role – both as a trombonist and as a clown – while giving words to a rather unexpected juxtaposition of existential and trivial matters. In this context, a classical trombonist is not supposed to act as a clown on stage, and the average audience neither expects a clown nor a trombonist to suddenly address the audience with existential questions in the middle of a performance.

Berio’s use of Brechtian *Verfremdung* in *Sequenza V* is thus an example of the special kind of morphological tension representing a distortion of our traditional image of the role of the musician. Such kinds of tension go hand in hand with the original kind of morphological tension relating exclusively to the “acoustic transformation relative to an inherited model” (Berio 1985: 98) of the instrument.

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<sup>8</sup> The translation from Danish has been made by the author of this essay. The original text sounds as follows: “Når basunisten midt i den 5. sequenza pludselig udbryder ‘Why?’, er resultatet en svimlende balanceakt mellem et klovnenummer og et spørgsmål om liv og død, lykkes det, tror man et øjeblik på at det er musikken selv, der spørger!” (Rasmussen 1998: 199).

Consequently, the listener's understanding of theatrical elements has become absolutely crucial in being able to decipher musical meaning communicated in this piece. This alters the identity of the musical work in such a way that the focus changes from the given score to the actual performance. In other disciplines within the humanities this paradigm shift has sometimes been referred to as the 'performative turn' (Guldbrandsen 2006) which has been put to words by the Norwegian music scholar Erling E. Guldbrandsen in the following way:

Despite its plurality of functions, the term 'performativity' displays a deepening actuality in aesthetics and in arts. This may be seen as an indication of a general change from essentialist conceptions to a more dynamic understanding of the art work, which may eventually instigate a stronger interest in the temporal and transitory aspects of the work of art. Rather than focusing on 'given' structural characteristics of the work, a performative perspective can enhance an inquiry into how the work takes on form through a play where the author, the performer, the interpreter, the reader, the spectator, or the listener are mutually conditioned by aesthetic practices, cultural processes, and regulations. (Guldbrandsen 2006: 141)<sup>9</sup>

Violation of the norms established by this mutual conditioning described by Guldbrandsen results in morphological tension, and since the score constitutes an act of the past and the performance an act of the present, one consequence of the 'performative turn', especially when combined with Brechtian *Verfremdung*, is that the musical work becomes more existentially pertinent to the listener.

Hence, in the view provided above, elements such as polyphony, amalgamation of voice and instrument, virtuosity, theatricality, and humor – of which some are common to all the pieces of the *Sequenza* series – can be interpreted as different ways of exploring the morphological component of the four-dimensional analytical model. This exploration is consistent with the global formal outline of the piece in which development in this dimension clearly diverges from the remaining three dimensions.

## 5. Evaluation of the Analytical Model

Despite the fact that Berio's four-dimensional approach originally referred specifically to the flute *Sequenza* and was possibly not intended as an analytical tool in the first place, our application of the model has indeed been shown to provide a reliable way of detecting different kinds of tension in the *Sequenzas* – and potentially, in many other compositions. In the paragraphs on formal considerations we have similarly seen that the tension analysis had strong implications for the sense of formal coherence and contrast.

Moreover, the analysis of *Sequenza V* emphasizes the importance of conceiving of tension as a multidimensional phenomenon, and it seems most appropriate not to exclude the possibility that dimensions other than the four in use here might be relevant. Even though the various dimensions often work together supporting each other in many typical musical contexts, they are not mutually conditioned. Development in tension across the four dimensions can thus easily move in diverging directions simultaneously, which was the case in the B section; in spite of the role that the composer assigned to the morphological

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<sup>9</sup>Importantly, Guldbrandsen does not consider performativity in the musical domain as unique to aesthetics of twentieth-century art music. Rather one of his aims is to refine the general concept of 'performative turn' by arguing that "the distinction between musical writing and playing is not as sharp as some may think. The study of musical performativity needs to be rehistoricized, knowing that the 19th century idea of the 'work' already implies questions of interpretation, aesthetic experience, and change" (Guldbrandsen 2006: 140).

dimension as the “rhetoric instrument” of the remaining three dimensions (Berio 1985: 98), this piece is indeed a good example of the emancipating potential of this dimension.

There are, however, some limitations to the four-dimensional analytical model. For instance, the analytical tables only provide a static picture – an ‘up-to-the-minute account’ – even though a dynamic process might in fact be taking place underneath. Consequently, the initial formal segmentation chosen by the analyst becomes fundamental to the final interpretation of the piece, and one has to pay particular attention to linear development in the tension levels within and across formal boundaries.

As was mentioned in the introduction and confirmed by the analysis, not all tension-inducing characteristics are yet sufficiently well-defined, and specifically their mutual interaction within dimensions raises certain problems when assigning tension levels to musical passages; for tension in a given dimension is mostly due to a combined effect of separate tension-inducing characteristics which can be mutually diverging.

For instance, in b1 the total lack of silence runs counter to our intuition about assigning a minimum level of tension in the temporal dimension due to the long tones and slow articulation. Additionally, the extremely high register in b2 only results in medium pitch tension because it is reached nearly exclusively through stepwise motion; and b3 is assigned approximately similar tension levels to a1 although the texture of this subsection is remarkably different from that of the beginning of the piece.

In the first subsection of A – a1 – mutually conflicting characteristics (rapid articulation and silence, constant register and tense intervals, constant and loud dynamics) lead to a medium level of tension in the temporal, pitch and dynamic dimensions. This is, however, a compromise which seems slightly unfaithful to the musical reality. Thus, we failed to notice that the tension increase from a1 to a2 was due to lack of silence (and not to a change in articulation) in the temporal dimension and due to greater variation in loudness (not to less constant dynamics) in the dynamic dimension. On the contrary, in the pitch dimension, tension increase was not only caused by increasing interval sizes, but also by gradually increasing pitch density as evident from the analysis of pitch-class expansion.

### **5.1 Revision of the Temporal, Pitch, and Dynamic Dimensions**

Tension conflicts within dimensions as the ones mentioned above thus support the notion that a revision of the model would be necessary in order to avoid missing significant analytical nuances. Therefore, I propose that all of the three first dimensions are subdivided into two separate tension categories each.

In the temporal dimension, ‘articulation density’ will refer to the speed in articulation or the concentration of separate tones being played whereas ‘sound density’ will refer to the overall presence of sound as opposed to silence. Long, sustained tones will thus result in relatively high ‘sound density’ and low ‘articulation density’ whereas many repeated, staccato tones will result in relatively high ‘articulation density’, but not necessarily high ‘sound density’.

In the pitch dimension, ‘interval size’ will obviously refer to the size of intervals in use. Generally, larger intervals will result in a higher level of tension, but also the quality (i.e. the degree of dissonance and consonance) of the intervals will influence tension levels in the ‘interval size’ category. For instance, dependant on musical context, a major seventh might very well entail more tension than an octave. The second tension category in the pitch

dimension will be ‘registral extremity’ where use of extremely low or high register will induce tension. Importantly, the listener’s estimation of high and low will depend both on the confines of human perception and the idiomatic range of the instrument(s) in question. The latter tension category is thus likely to interact with the morphological dimension in certain ways.

In the dynamic dimension, I will distinguish between ‘loudness’ and ‘dynamic contrast’ which refer directly to Berio’s (1985: 98) initial distinction between “moments of maximum sound energy and maximum dynamic contrast”, respectively.

To aid application of the revised analytical model the six tension categories will furthermore be grouped into ‘local’ and ‘global components’. For the ‘local components’ (articulation density, interval size, and dynamic contrast), the starting point is either the time-span, the interval size, or the dynamic contrast between two neighboring tones, respectively. Subsequently, considerations for each pair of adjacent tones are generalized to obtain an overall tension level for a given musical segment. Conversely, the ‘global components’ (sound density, registral extremity, and loudness) start out from the overall image of either the concentration of sounds, the register, or the loudness, respectively.

In table 7 the six tension categories of the three first dimensions including the grouping in ‘local’ and ‘global components’ have been summarized and compared with Berio’s initial presentation of the four-dimensional model (Berio 1985: 97-98):

GROUPIN G	DIMENSIO N	<i>Local component</i>	<i>Global component</i>
		<i>Temporal</i>	‘Articulation density’: “speed in articulation” (Berio 1985) i.e. concentration of tones.
<i>Pitch</i>	‘Interval size’: “when notes jump about within a wide gamut and establish the tensest intervals” (Berio 1985) i.e. size and quality of intervals.	‘Registral extremity’: “when they [the notes] insist on extreme registers” (Berio 1985) i.e. the use of extreme high and low registers.	
<i>Dynamic</i>	‘Dynamic contrast’: “moments of [...] maximum dynamic contrast” (Berio 1985) i.e. range of dynamics.	‘Loudness’: “moments of maximum sound energy” (Berio 1985) i.e. absolute dynamic level.	

**Table 7.** Revised model of the temporal, pitch, and dynamic dimensions with grouping of tension categories in ‘local’ and ‘global components’.

## 5.2 Revision of the Morphological Dimension

As argued earlier, amalgamation of voice and instrument and the presence of theatrical elements encourage us to extend our definition of morphological tension to include distortion of our traditional image of the musician and his role in the performance context (in addition to the “acoustic transformation relative to an inherited model” of the instrument originally mentioned by Berio [1985: 98]). This was also evident from the composer’s notational practice where certain novel devices were indeed introduced to change the acoustic properties of the instrument (a typical landmark of morphological tension) whereas others were rather introduced to influence the musician’s appearance on stage (i.e. to promote theatricality).

However, if we extended our definition of morphological tension without making a distinction between transformation of the instrumental idiom and performance context, we would have had to assign a relatively stable, high level of morphological tension throughout the piece due to (or in spite of) the fact that theatrical elements are prominent in the A section and transformation of the instrumental idiom is at its highest in the B section. More specifically, morphological tension with respect to the performance context is created, primarily in the A section, by raising and lowering the instrument, surprisingly avoiding a tone, moving the slide without playing, preferring aleatoricism to serialism in pitch-structure (e.g. in a2, possibly, as a comment to some of Berio's contemporaries), and by uttering the strange "Why?" at the end of the A section. Conversely, tension-inducing characteristics – chiefly with respect to instrumental transformation – are dominant in the B section as polyphony, continuous sounds, amalgamation of voice and instrument, use of metal plunger, flutter tongue, vowel sounds, extremely high register, noise sounds, and indiscrete pitches. This analysis supports an interpretation where the 'performance context' category of the morphological dimension is at a high tension level in the A section, and the 'instrumental idiom' category is at a high tension level in the B section.

The analytical distinction between the two tension categories of the morphological dimension appears in table 8 below. Notice here that only the 'instrumental idiom' category was explicitly referred to by Berio (1985: 97-98). This was most probably due to the fact that the composer presented his four-dimensional model only with respect to the first *Sequenza* for flute which does not make considerable use of theatrical elements.

<b><i>Morphological dimension</i></b>	<b><i>'Instrumental idiom':</i></b> "when the image, <i>my</i> image of the flute [or any other relevant instrument] is drastically altered" (Berio 1985)	<b><i>'Performance context':</i></b> Not explicitly mentioned by Berio in his discussion of the flute <i>Sequenza</i> (which does not make considerable use of theatrical elements).
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**Table 8.** Revised model of the morphological dimension.

Consequently, the general increase in morphological tension through the course of the piece, which was pointed out in the formal considerations above, takes place primarily in the 'instrumental idiom' category whereas the morphological tension of the 'performance context' category already present in the A section subtly conceals the fact that the instrument itself is close to its traditional image in the initial section of the piece. That is, by acknowledging the two independent, but mutually related, kinds of morphological tension explored in *Sequenza V*, the revised analytical model succeeds in accounting for theatricality and performance elements without failing to realize the increasing transformation of the instrumental idiom which, as argued above, seems to constitute a key aspect of the musical meaning that the composer wanted to communicate in this piece.<sup>10</sup>

<sup>10</sup>The author would like to thank Ryu Cipris for proofreading the manuscript for this article.

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